

**CLAIMS**

1. A method for reducing the crest factor of a multi-carrier signal, the method comprising:
  - (a) evaluating an inverse Fourier transform of the multi-carrier signal, thereby generating a transformed multi-carrier signal;
  - (b) defining a signal-to-be-corrected to be the transformed multi-carrier signal;
  - (c) generating a simulated output signal;
  - (d) estimating a signal maximum of the simulated output signal;
  - (e) deriving a first correction variable on the basis of the estimate;
  - (f) correcting the signal-to-be-corrected using at least the first correction variable, thereby generating a corrected output signal having a reduced crest factor;
  - (g) defining the corrected output signal to be the signal-to-be-corrected; and
  - (h) iteratively repeating steps (c) through (g) until the occurrence of a condition selected from the group consisting of causing the corrected output signal to have a crest factor below a predetermined threshold, and performing a predetermined number of iterations.

2. The method of claim 1, wherein generating a simulated output signal comprises filtering the signal-to-be-corrected.
3. The method of claim 1, further comprising temporarily storing the corrected output signal for use in a subsequent iteration step.
4. The method of claim 1, wherein generating a simulated output signal comprises simulating an effect of a downstream filtering-and-interpolating system on the corrected output signal.
5. The method of claim 4,  
  
wherein correcting the signal-to-be-corrected  
comprises subtracting therefrom a correction signal  
formed by multiplying the first correction variable  
by a normalized impulse, thereby generating the  
corrected output signal;
6. The method of claim 5, further comprising temporarily storing the corrected output signal.
7. The method of claim 4, further comprising:  
  
deriving a second correction variable from the  
estimate in the same iteration step in which the  
first correction variable is derived,  
  
subtracting, from the signal-to-be-corrected, a value  
derived from the first and second correction  
variables, thereby generating the corrected output  
signal.

- 8 The method of claim 7, further comprising temporarily storing the corrected output signal.
9. The method of claim 1, further comprising reducing a bit width of the transformed multi-carrier signal.
10. The method of claim 4, wherein the simulated signal comprises a plurality of sample values and deriving the correction variable comprises using a subset of the sample values.
11. The method of claim 1, wherein deriving a correction variable comprises identifying a particular sample point at which the estimate occurs.
12. The method of claim 4, wherein simulating an effect of a filtering-and-interpolating system comprises convolving a shortened impulse response of a filter and a reduced impulse response of an interpolator with the signal-to-be-corrected.
13. The method of claim 12, further comprising:
  - selecting the shortened impulse response to be the first 20% of the sample values of the impulse response of the filter; and
  - selecting the reduced impulse response to be the central 60% of the sample values of the impulse response of the interpolator.
14. The method of claim 1, further comprising passing the corrected output signal through a D/A converter.

15. The method of claim 1, wherein generating a simulating output signal comprises simulating a high-pass filter followed by a low-pass filter.
16. The method of claim 1, wherein generating a simulated output signal comprises simulating fourth order IIR high pass filter and simulating an FIR interpolation filter.
17. The method of claim 1, wherein the multi-carrier signal is selected from the group consisting of a DMT signal and an OFDM signal.